Honeywell

Optimus™ 5100

with Windows® CE 5.0 Core

User's Guide

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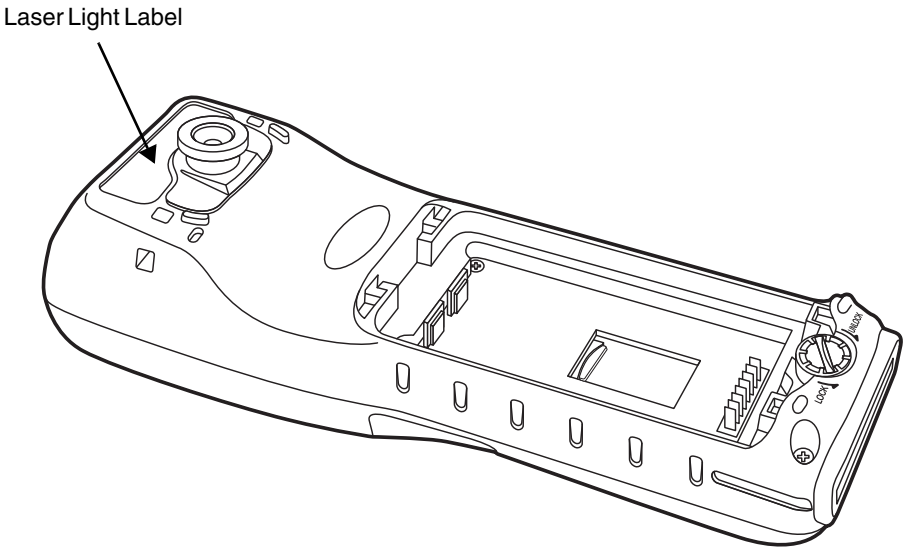
1 Agency Approvals

Label Locations

Optimus 5100 mobile computers meet or exceed the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow. Read these guidelines carefully before using your mobile computer.



Laser Light Label

Safety & RF Approvals by Country:

Country	Safety	RF (Radio)
China	CCC	SRRC
India	WPC	

Laser Safety Label

If the following label is attached to your product, it indicates the product contains a laser engine or laser aimer.

Laser Eye Safety Statement: This device has been tested in accordance with and complies with IEC60825-1: 2007 (2nd Edition) and 21 CFR 1040.10 and 1040.11, except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. LASER LIGHT, DO NOT STARE INTO BEAM, CLASS 2 LASER PRODUCT, 1.0 mW MAX OUTPUT: 650nM.

This class 2 laser product is in accordance with the requirements of IEC60825-1 Ed. 1.2 Clause 6.2(a).

Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CB Scheme

Certified to CB Scheme IEC 60950-1:2005 (2nd Edition).

For European Community Users

Honeywell complies with Directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on waste electrical and electronic equipment (WEEE).

Waste Electrical and Electronic Equipment Information

This product has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems for product disposal. Those systems will reuse or recycle most of the materials of the product you are disposing in a sound way.

The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

If you need more information on the collection, reuse, and recycling systems, contact your local or regional waste administration.

You may also contact your supplier for more information on the environmental performances of this product.

2 Getting Started

Out of the Box

Verify that your carton contains the following items:

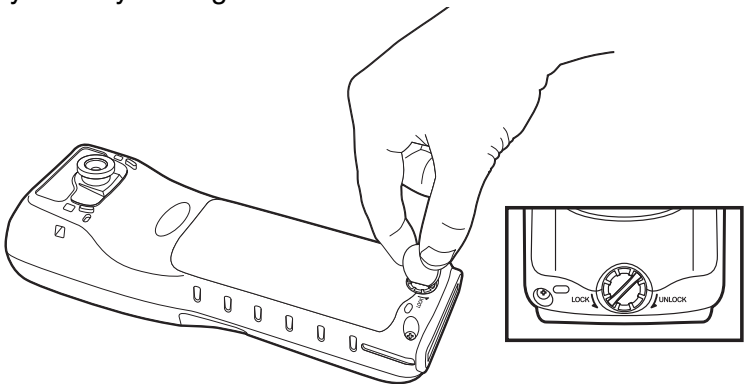
- Optimus 5100 mobile computer (the terminal)
- Main battery pack (3.7v, Li-ion)
- AC power supply
- Localized plug adapters
- Quick Start Guide
- Belt Clip
- Lanyard

Note: Be sure to keep the original packaging in case you need to return the Optimus terminal for service; see *Product Service and Repair on page 11-1.*

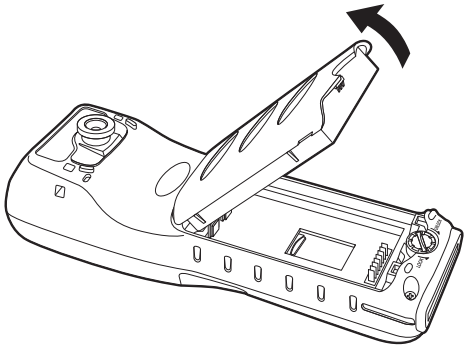
Step 1. Install the Main Battery

The 5100 is shipped with the battery packaged separate from the unit. Follow the steps below to install the main battery.

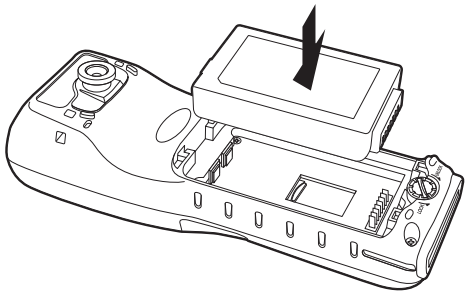
1. Remove the battery door by turning the screw clockwise to unlock the battery door.



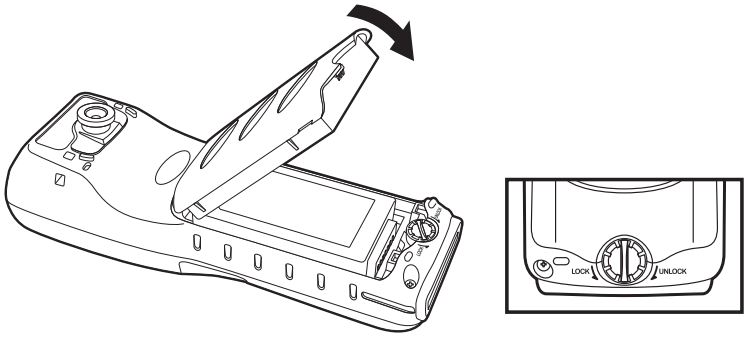
2. Remove the battery door.



3. Insert the battery into the battery well with the labels facing upward.



4. Replace the door with a hinging motion and turn the screw counter-clockwise to lock the door.



Note: The battery door must be installed prior to booting the unit.

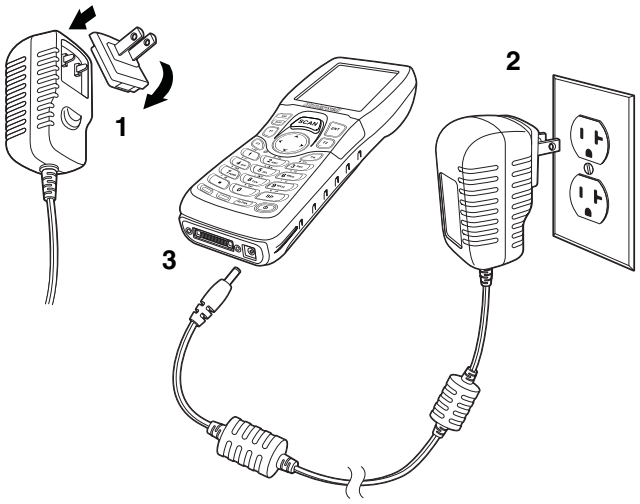
We recommend use of Honeywell Li-Ion battery packs. Use of any non-Honeywell battery may result in damage not covered by the warranty.

Step 2. Charge the Batteries

5100s ship with both the main battery pack and internal backup battery significantly discharged of power. Charge the main battery pack with the Optimus charging cable for **a minimum of 4 or 6 hours depending on your battery before initial use**.

1. Attach the appropriate plug adapter to the plug of the power cable.
2. Insert the plug into the appropriate power source.
3. Plug the Optimus power cable into the DC Power Jack (see page 3-8) on the bottom end of the unit.

Note: If you remove the battery pack or it completely discharges, there is a 30 minute window in which to insert a charged battery pack before the backup battery completely discharges. If your backup battery completely discharges, the contents of the RAM memory will be lost. If your backup battery is less than fully charged, there is a proportionally smaller window of time available.



LED Indicators

Red LED On	Charging
Green LED On	Battery is full or fully charged

⚠ *We recommend use of Honeywell peripherals, power cables, and power adapters. Use of any non-Honeywell peripherals, cables, or power adapters may cause damage not covered by the warranty. Ensure all components are dry prior to mating terminals/batteries with peripheral devices. Mating wet components may cause damage not covered by the warranty.*

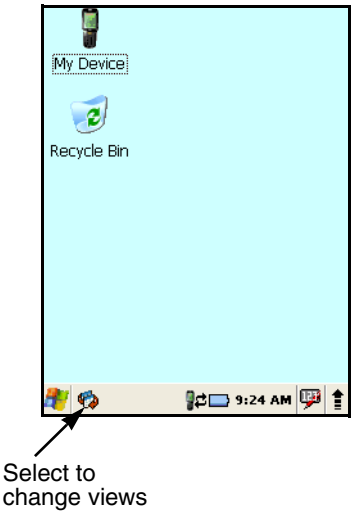
Step 3. Boot the Terminal

The terminal begins booting as soon as power is applied and runs by itself. Do NOT press any keys or interrupt the boot process.

When the boot process is complete, the Desktop appears, and the terminal is ready for use.

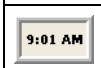
Desktop

Note: You can access the Desktop any time by selecting the Change Views icon in the command bar and selecting Desktop on the popup menu.



Command Bar Icons

The command bar, located at the bottom of application screens, provides access to many system functions and programs.

Icon	Meaning
	Opens the Start menu.
	Changes views between open applications or returns to the Desktop.
	Accesses the Bluetooth radio. Select this icon to open the Bluetooth Handler (see page 8-1).
	Shows signal strength of WiFi radio. (A red X indicates the terminal is not currently associated to an access point.)
	Indicates that the USB communication cable is connected. Select to display USB status window.
	Indicates the status of battery power. Select to open the Power control panel setting. When this icon shows a red power plug, it indicates the device is using external power.
	Displays the current time. Select to change the time and date.

Icon	Meaning
	Indicates whether the keypad is standard alpha (upper and lower case), all caps alpha, in numeric mode, or in mouse pointer mode. Press the **ALPHA** button on the keypad to switch modes.
	The up arrow allows you to turn the Wireless LAN and Bluetooth connection on or off. It also allows you to toggle between the Keypad and Transcriber. When **Keypad** is selected, a keypad is displayed so you can select text and number keys. **Transcriber** recognizes handwriting and symbols entered using the stylus.

Using the Stylus (Optional)

If your terminal is equipped with a touch screen, a stylus is included. Use this stylus (or your finger) to select or enter information on the touch screen. The stylus functions as a mouse; generally, a tap is the same as a click.

Tap	Tap the touch screen once or double tap to open menu items and select options.
Drag	Hold the stylus on the screen and drag across the screen to select text and images.
Tap & hold	Tap and hold the stylus on an item and a pop-up menu appears. On the pop-up menu, tap the action of the task you want to perform.

⚠ *Use of objects, such as paper clips, pencils, or ink pens on the touch screen can damage the input panel and may cause damage not covered by the warranty.*

For more information about the touch screen, see Screen Display on page 3-2.

Selecting Programs

Select **Start -> Programs**. To open a program, select the icon on the menu.

Pop-Up Menus

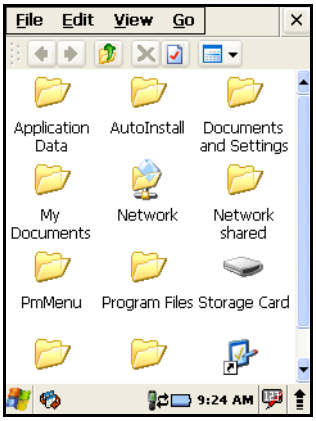
You can quickly choose an action for an item using the pop-up menus.

1. Select and hold the stylus on the item name. The pop-up menu appears.
2. Select the action you want to perform.

The contents of pop-up menus change according to the program you are using.

Using Windows Explorer

Use Windows Explorer to navigate through the files on your system. On the desktop, select the **My Device** icon and Windows Explorer opens to the root level.



3

Terminal Hardware Overview

5100 terminals include a number of standard terminal configurations as well as charging and communication peripherals and accessories to maximize the efficiency of your application.

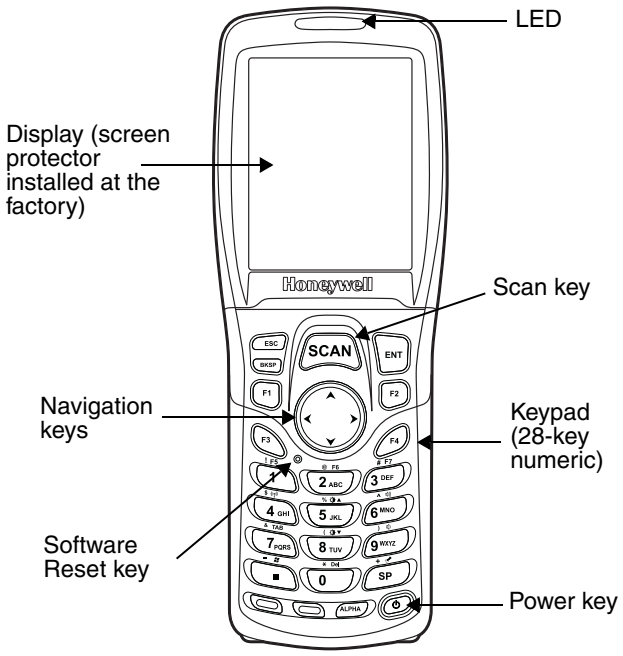
Standard Terminal Configurations

Optimus 5100
• Microsoft Windows CE 5.0 Core • Marvell PXA 300 624MHz • 64MB RAM X 128MB (non-volatile) Memory • 28-key numeric keypad • 2.4” 1/4 QVGA transmissive active matrix color display • Standard Capacity: Li-ion battery: 3.7V / 2200mAh / 8.1 Wh • 4813 laser engine • Optimus power cable (included with each 5100)

Optional Terminal Configurations

Optimus 5100 Optional Configurations
• 2.4” 1/4 QVGA transmissive active matrix color display with touch screen • Extended Capacity: Li-ion battery: 3.7V / 3300mAh / 12.2 Wh (with extended battery door) • 5300 SR image engine • (WPAN/WLAN) - Bluetooth and 802.11b/g radio

Front Panel Features



Scan/Decode LED

The LED is user-programmable.

Red	Scanned bar code is not decoded
	Main battery is charging
Green	Scanned bar code is successfully decoded
	Main battery charging has completed
Blue or Red	Soft or hard reset

Keypad

A 28-key numeric keypad is included on the unit.

Screen Display

The display is a LCD (Liquid Crystal Display). The 2.4” (1/4) QVGA (Quarter Video Graphic Array) is transmissive active matrix color and backlit. The resolution is 240 x 320; see Display Backlight on page 3-3.

Touch Screen Display (optional)

The display is a LCD (Liquid Crystal Display) with a 4-wire analog resistive touch screen. The 2.4” (1/4) QVGA (Quarter Video Graphic Array) is transmissive active matrix color and backlit. The resolution is 240 x 320; see Display Backlight on page 3-3.

⚠ *5100s ship with a screen protector already installed over the touch screen to help prevent damage to the touch screen. Do NOT remove this screen protector before initial use. Honeywell recommends using screen protectors, especially for applications that require high volume interfacing with the touch screen. For more information, see* *Using Screen Protectors* on page 3-3. *You can purchase additional screen protectors by contacting your Honeywell sales representative.*

For touch screen input, use the stylus included with the terminal or your finger. The method you choose depends on which one is most appropriate for your application. While there is a great deal of variation in different applications, you generally achieve greater accuracy with the stylus for buttons or icons that are close together.

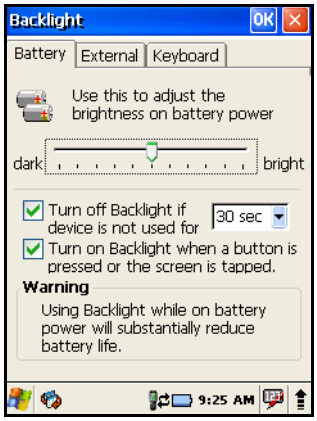
⚠ *Use of objects, such as paper clips, pencils, or ink pens on the touch screen can damage the input panel and may cause damage not covered by the warranty.*

Display Backlight

The intensity of the backlight of the screen display may be changed, and the backlight may be programmed to turn off after the terminal has been idle for a specified period of time.

To adjust the intensity of the backlight while on battery power, select **Start** -> **Settings** -> **Control Panel** -> **Backlight**.

Screen Backlight - Battery/External Power



Move the slider to adjust the screen backlight while on battery power.

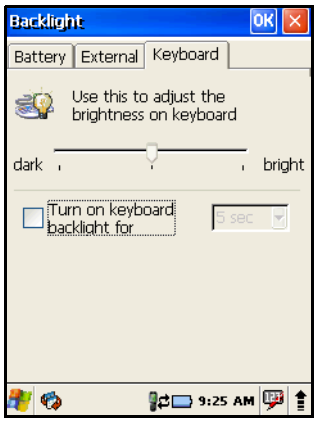
You may turn the screen backlight off if the device is not used for a designated period of time by checking the option and designating the desired time period.

You may also turn on the screen backlight when a button is pressed by selecting the appropriate checkbox.

Note: Using the backlight option while on battery power substantially reduces battery life.

You may make the same changes when on external power by selecting the **External** tab.

Keypad Backlight



The intensity of the backlight of the keys on the keypad may be changed and the backlight may be programmed to remain on for a specified period of time once a key is pressed.

To adjust the brightness of the keys, select the **Keypad** tab. Move the slider to adjust the backlight while on battery power.

To turn on the keypad backlight, check the checkbox and change the duration of the backlight.

Using Screen Protectors

Honeywell defines proper use of the terminal touch panel as using a screen protector and proper stylus. Screen protectors maintain the ongoing integrity (i.e., prevent scratching) of the touch panel, which is why their use is recommended for applications that

require a high to medium level of interface with the touch panel, such as signature capture for proof of delivery.

Honeywell advocates the use of screen protectors on all Dolphin devices. We recommend implementing a screen protector replacement program to ensure that screen protectors are replaced periodically when signs of damage/wear are noticeable. Replacement screen protectors can be purchased directly from Honeywell. Please contact a Honeywell sales associate for details.

Honeywell also mandates use of a proper stylus, which is one that has a stylus tip radius of no less than 0.8 mm. Use of the Honeywell stylus included with the terminal is recommended at all times.

Honeywell warranty policy covers wear on the touch panel for the first twelve (12) months if a screen protector is applied and an approved stylus is used for the 12 month duration covered by the warranty.

Removing the Screen Protector

5100s ship with a touch screen protector already installed. To replace the screen protector, you must remove the one already installed.

1. Press the **Power** key to put the terminal in Suspend Mode.
2. Using a strong, flat, plastic card wedge the edge of the card under the existing screen protector. Catch the edge of the screen protector and pull it up and away from the touch panel.

Note: If you have one, you can also use the small plastic squeegees designed for touch panels.

3. Wipe the screen with a clean, non-abrasive, lint-free cloth.

Note: Use ionized air, if available, to blow additional dirt or particles off the touch panel.

Installing Your Screen Protector

When installing a new screen protector, use a flat plastic card to apply the screen protector smoothly and remove any air bubbles.

Note: If you have one, you can also use the small plastic squeegees designed for touch panels.

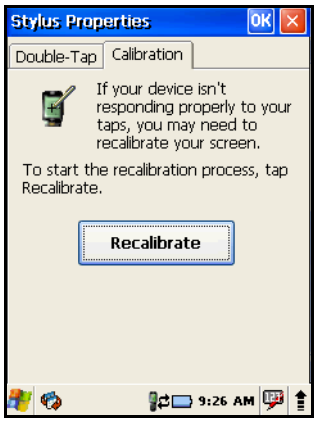
1. Press the **Power** key to put the terminal in Suspend Mode.
2. Clean the touch panel thoroughly with a clean, non-abrasive, lint-free cloth. Make sure nothing is on the touch panel.
3. Release the top edge of the backing paper on the screen protector.
4. Align the exposed edge of the screen protector along the top edge of the touch panel. Make sure that it lies flush with edges of the touch panel.

Note: To reposition the screen protector, lift up gently and reapply.

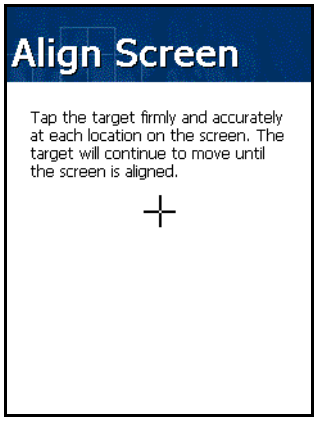
5. Use the card on top of the screen protector to smooth it out as you pull on the backing paper.
6. Pull smoothly and evenly from top to bottom until the screen protector is applied. Press gently but firmly. Use the card as necessary to smooth out any air pockets or bumps after application.
7. Press the **Power** key to wake the terminal and check the touch panel with the stylus.
8. Verify that the screen accepts input from the stylus as usual. If not, re-apply the screen protector.
9. Press the **Power** key to put the terminal back in Suspend Mode.
10. Clean the surface of the screen protector with a clean, non-abrasive, lint-free cloth.

11. Press the **Power** key to wake the terminal again.

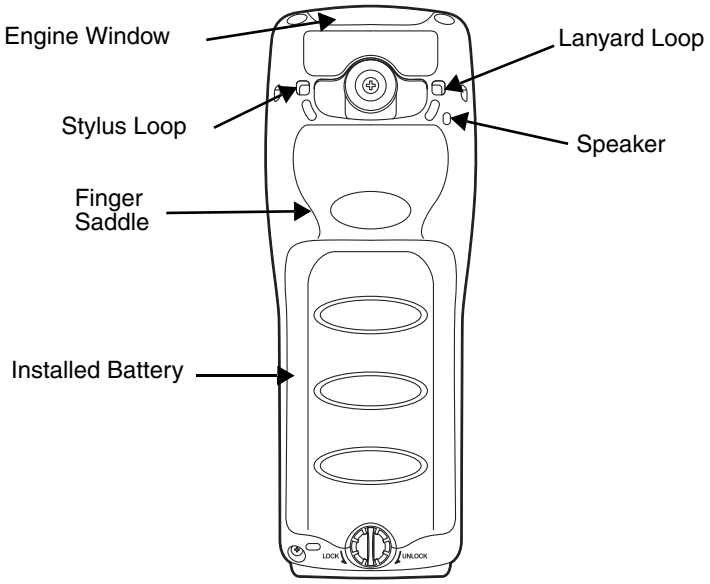
12. For maximum performance, recalibrate the screen. Select **Start** -> **Settings** -> **Control Panel** -> select **Stylus** -> **Calibration** tab.



13. Select **Recalibrate** and follow the instructions on the screen.



Back Panel Features



Lanyard

The 5100 comes with a lanyard. The lanyard is inserted in a loop on the device.

Finger Saddle

This is a slightly depressed and angled area of the back housing that is designed to cradle or “saddle” your finger while holding the terminal. This unique ergonomic design makes the terminal comfortable to hold and helps prevent you from accidentally dropping the terminal.

Installed Battery

For information about installing the battery, see Changing the Main Battery Pack on page 3-10. For information about battery power, see Battery Power on page 3-9.

Speaker

The integrated speaker sounds audio signals as you scan bar code labels and enter data, but emits no ambient noise on system activity (i.e., processor, memory access, radio traffic, etc.). The speaker can also be used for playing sounds (e.g., WAV or MP3 files).

The speaker meets the following SPL levels at 40cm:

- 500Hz–67db
- 1KHz–72db
- 4KHz–72db

Stylus (Optional)

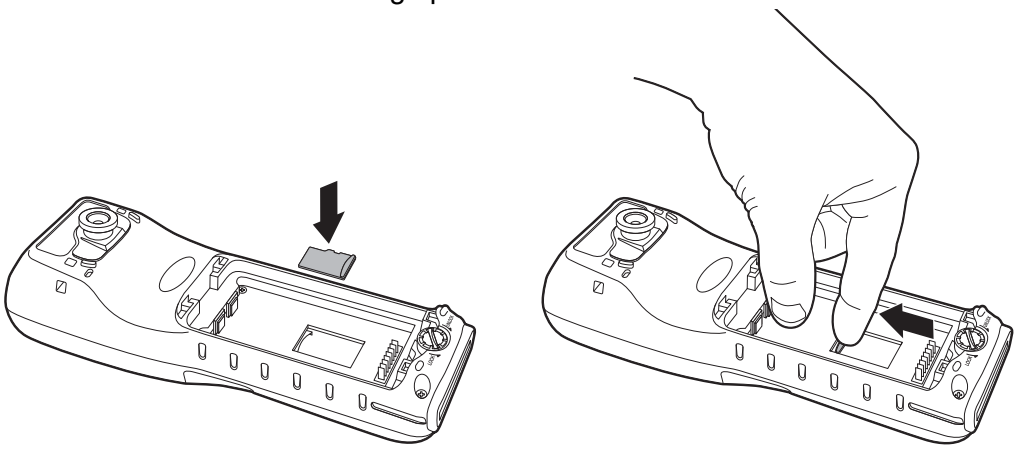
If your Optimus terminal is equipped with a touch screen, it ships with a stylus inserted in a loop on the device. Store the stylus in the lanyard when you’re not using it; see Using the Stylus (Optional) on page 2-5.

Installing Memory Cards

The 5100 supports Micro Secure Digital (SD) memory cards. You can purchase these SD cards by contacting your Honeywell sales representative.

To install an SD card

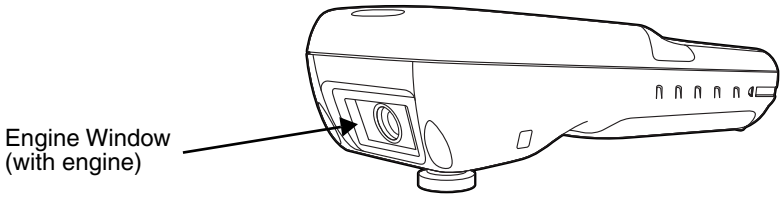
1. Press the **Power** key to put the terminal in Suspend Mode; see Suspend Mode on page 3-13.
2. Remove the battery.
3. Insert the SD card with the label facing upward.



Note: To remove an installed SD card while the battery door cover is open, tap on the edge lightly to unlock the card; the card will pop out just enough for you to grab its edge and pull it out.

4. Replace the battery and battery door cover.
5. Tap the **Power** key to resume operation.
6. To verify that the operating system recognizes the new memory card, open Windows Explorer and navigate to My Device\Storage Card.

Top Panel Features



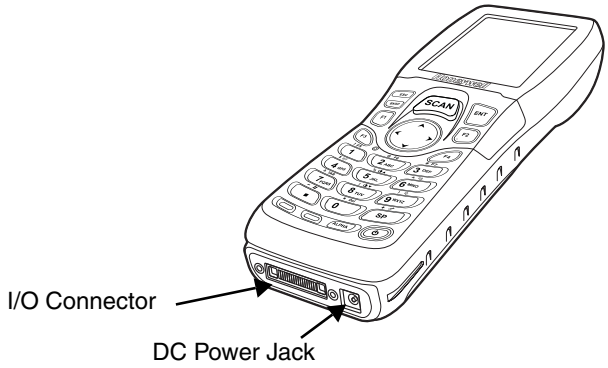
Laser Engine Window

If you terminal is equipped with a 4813 laser engine, the angled engine reads and decodes 1D bar code symbologies. For more information, see Using the Laser Engine on page 5-1.

Image Engine Window

If you terminal is equipped with a 5300SR image engine, the angled engine reads and decodes most popular bar code symbologies and takes images like a digital camera. For more information, see Using the Image Engine on page 6-1.

Bottom Panel Features



DC Power Jack

The DC power jack receives external power from the Optimus power cable that is included with the terminal. When connected to the Optimus power cable, the terminal is powered and the main battery pack is charging.

I/O Connector

The I/O mechanical connector is designed to work exclusively with Optimus 5100 peripherals and cables. This connector powers the terminal, charges the main battery, and facilitates communication. This connector supports full speed USB 1.1 communication (up to 12 Mbps) and RS-232 communications with a maximum speed of 115Kbps and seven baud rate settings.

Through this connector, you can communicate with a host workstation via Microsoft ActiveSync; see Connecting and Synchronizing the Terminal and Workstation on page 7-2.

The I/O connector supports the following signals:

DC IN	Clear To Send
Transmitted Data	Received Data
Request To Send	GND
USB Host +5V	RS-232 Shutdown
USB Host D+	USB Client D+
USB Host D-	USB Client D-
USB Host Detect	USB Client +5V

Note: Signals referenced are for a DTE device.

Optimus Peripherals/Accessories for the 5100

The following items are sold separately and enhance your 5100's capabilities.

Optimus HomeBase™ Device

This charging and communication cradle supports USB and RS-232 communication, enabling your terminal to interface with the majority of enterprise systems. When a terminal is seated in a powered base, its main battery pack charges in four hours for the standard capacity 2200mAh pack and in six hours for the extended capacity 3300mAh pack.

A spare battery may also be charged in the battery charging well behind the terminal.

For more information, see Optimus HomeBase Device on page 9-1.

Optimus QuadCharger™ Device

The Optimus QuadCharger device, a four-slot charging station for Optimus Li-ion battery packs, can charge each battery in four hours (2200 mAh) or six hours (3300 mAh).

For more information, see Optimus QuadCharger Device on page 10-1.

Optimus USB Communication Cable

The Optimus USB Communication Cable is used when communicating between the terminal and a PC/ laptop via the USB port.

Li-ion Battery Packs

The Li-ion battery pack provides the main power supply for the terminal. For more information, see Battery Power on page 3-9.

For information on how to purchase these items, contact a Honeywell sales representative.

Battery Power

The intelligent battery technology inside the terminal features two types of battery power:

- The main battery pack
- The backup battery located inside the terminal (see Internal Backup Battery on page 3-11)

Both batteries work together to prevent data loss when the terminal is used over long periods of time.

Both batteries must be charged to full capacity before using the 5100 for the first time! Charge the main battery pack with the Optimus charging cable for **a minimum of 4 or 6 hours depending on your battery before initial use.**

Main Battery Pack

We recommend use of Honeywell Li-Ion battery packs. Use of any non-Honeywell battery may result in damage not covered by the warranty.

There are two Li-ion battery packs available for the 5100:

Standard Capacity: Li-ion 3.7V/2200mAh/8.1Wh

Extended Capacity: Li-ion 3.7V/3300mAh/12.2Wh

The Li-ion battery pack is the primary power source for the Optimus terminal as well as for the internal backup battery.

Changing the Main Battery Pack

Before installing a battery pack, press the Power key to put the terminal in Suspend Mode (see page 3-13) so that operations are suspended before removing the main power source. Always put the terminal in Suspend Mode prior to changing the battery. The 5100 is shipped with the battery separate from the unit. You will need to remove the battery door, insert the battery, and replace the battery door. Refer to the instructions included in Installing the Main Battery section (page 2-1).

Note: The battery door must be installed prior to booting the unit.

Charging Options

When the battery is installed in the terminal, you can use any of the peripherals listed below to charge the battery.

- Optimus HomeBase Device (see page 9-1)
- Optimus Comm/Charge Cable; Connecting the USB Charging/Communication Cable (see page 7-2) You may charge the device using the USB connection if you do not have a wall adapter. There are two options that allow either 100mA or 500mA of current over the USB connection. Access the option by selecting **Start** -> **Settings** -> **Control Panel** -> **Power** -> **USB Charging**.

To fully charge the Li-ion battery before installing it in the terminal, use the

- Optimus QuadCharger Device (see page 10-1) or insert the battery in the spare battery charging well in the back of the Optimus HomeBase.

Charging Time

The standard capacity 2200mAh Li-ion battery pack requires four hours to charge to full capacity, while the extended capacity 3300mAh pack requires six hours.

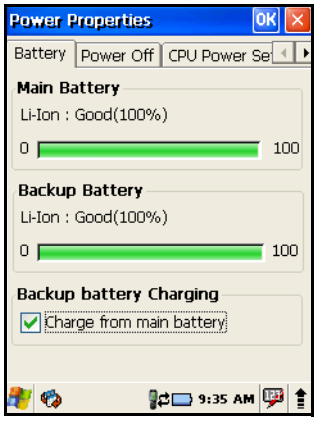
Managing Main Battery Power

Data and files saved on the Optimus terminal may be stored in RAM memory; therefore, maintain a continuous power supply to the terminal to help prevent data loss. When you remove a battery pack, insert another charged battery pack in the Optimus. If the main battery pack is low, insert the terminal into a charging peripheral to power the terminal and begin recharging the battery.

*Note: If the main battery is low and the terminal is in Suspend Mode, pressing the **Power** button does **not** wake the Optimus 5100 terminal; you must replace the discharged battery with a fully charged battery, or apply AC power to the terminal.*

Checking Battery Power

Power icons appear in the command bar at the bottom of the window. Select the battery icon to open the Power Properties. The Battery tab opens displaying the charge status of both the main and backup batteries.



*Note: You can also check battery power by selecting **Start** -> **Settings** -> **Control Panel** -> **Power**.*

Storage Guidelines

To maintain optimal battery performance, follow these storage guidelines:

- Avoid storing batteries outside the specified range of -4 to 122° F (-20 to 50°C) or in extremely high humidity.
- For prolonged storage, do not keep batteries stored in a charger that is connected to a power source.

Guidelines for Battery Pack Use and Disposal

The following are general guidelines for the safe use and disposal of batteries:

- We recommend use of Honeywell Li-Ion battery packs. Use of any non-Honeywell battery may pose a personal hazard to the user.
- DO NOT attempt to charge damp/wet mobile computers or batteries. All components must be dry before connecting to an external power source.
- Replace defective batteries immediately; using a defective battery could damage the Optimus terminal.
- Never throw a used battery in the trash. It contains heavy metals and should be recycled according to local guidelines.
- Don't use a battery in any other manner outside its intended use in Optimus terminals and peripherals.
- Don't short-circuit a battery or throw it into a fire; it can explode and cause severe personal injury.
- Excessive discharge damages a battery. Recharge the battery when your terminal indicates low battery power.
- If you observe that the Honeywell battery supplied is physically damaged in some way, send it to Honeywell or an authorized service center for inspection. Refer to the Product Service and Repair (page 11-1) section of this guide.
- Although your battery can be recharged many times, it will eventually be depleted. Replace it after the battery is unable to hold an adequate charge.
- If you are not sure the battery or charger is working properly, send it to Honeywell or an authorized service center for inspection.

Internal Backup Battery

Located inside the terminal, the backup battery is a 3.7V Lithium Polymer battery.

The internal backup battery prevents the terminal from being reset when you remove the main battery pack. This backup battery retains RAM data and allows the real-time clock to remain operational for at least 30 minutes. If the terminal is left without the main battery pack for more than 30 minutes, the internal backup battery discharges and needs to be recharged to function according to specifications.

Note: Even if the internal backup battery fails, data and programs stored in Flash memory (\\Honeywell\AutoInstall) or on an optional SD card are not lost. However, the terminal automatically cold boots when you install a fully charged battery pack, and you need will to reset the Real Time Clock.

Charging

The internal backup battery charges off the main battery pack and requires 2 hours charge time to backup RAM data for 30 minutes. You can begin using the Optimus terminal after charging the main battery for four or six hours (depending upon your battery); however, the internal backup battery will continue to charge off the main battery.

To ensure that the internal backup battery functions properly, maintain a consistent power supply for the first eight hours of terminal operation. This power supply can be external power (using a charging peripheral) or an installed, charged battery pack or a combination of both.

Resetting the Terminal

Soft Reset: Press and release the **Reset** button. This resets RAM and reloads the OS.

Hard Reset: Press and hold the **Reset** button and then press and release the **Power** button. This resets RAM, reloads the OS, and resets the Real Time Clock.

Soft Reset (Warm Boot)

A soft reset re-boots the terminal without losing RAM data, terminates all running applications, reloads the OS, and launches Autoinstall, which re-initializes the terminal.

You would perform a soft reset 1) when the terminal fails to respond, 2) after installing software applications that require a reboot, or 3) after making changes to certain system settings.

1. Press the **Reset** button. The screen turns white and the decode and scan LED flashes blue for approximately three seconds.
2. When the reset is complete, the Desktop appears.

Hard Reset (Cold Boot)

⚠ *A hard reset erases all of the data and applications stored in RAM memory, reloads the OS, resets the Real Time Clock (RTC), launches Autoinstall, re-installs all programs stored in the* ***\Honeywell\Autoinstall*** *folder, and re-initializes the terminal.*

Hard resets automatically launch a soft reset as part of the boot process if there are CAB files present.

1. Press and hold the **Reset** button and then press and release the **Power** button. The screen turns white and the decode and scan LED flashes red for approximately three seconds.
2. The terminal re-initializes, which .

Note: Set the time and date after each hard reset to ensure that the system clock is accurate. Select the date on the command bar to open the Clock setting and set the time and date.

Suspend Mode

Suspend Mode suspends terminal operation. The terminal appears to be “off” when in Suspend Mode. The terminal is programmed to go into Suspend Mode automatically when inactive for a specified period of time. You can set this time period in the Power setting.

To suspend and resume operation, press the **Power** button. You may also press the front Scan key to wake a suspended device unless the battery door has been removed and replaced.

*Note: You should always put the terminal in Suspend Mode when you change the battery pack; see Changing the Main Battery Pack on page 3-10. When you replace the battery door, press the **Power** button to wake the device. **Pressing the front Scan key will not wake up the device when the battery door is replaced.***

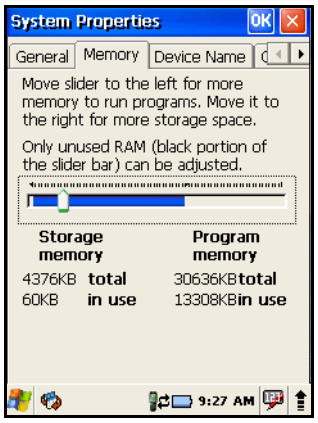
Troubleshooting Suspend/Resume

If the terminal does not wake when you press the Power button, the main battery might be too low to resume operation. To check, remove the battery and install a fully charged battery or connect the terminal to a Optimus charging peripheral.

Changing the Memory Allocation

You can adjust file storage vs. program memory in System Properties.

1. Select **Start** -> **Settings** -> **Control Panel** -> **System** -> **Memory** tab.



2. Move the slider to adjust the memory allocation and select **OK**. The changes take effect immediately.

Care and Cleaning of the Optimus Terminal

When needed, clean the engine window and the LCD display with a clean, non-abrasive, lint-free cloth. The terminal can be cleaned with a damp cloth.

Optimus 5100 Technical Specifications

Operating System	Microsoft Windows CE 5.0 Core
Development Environment	Optimus 5100 SDK
Application Software	Tools and Demos

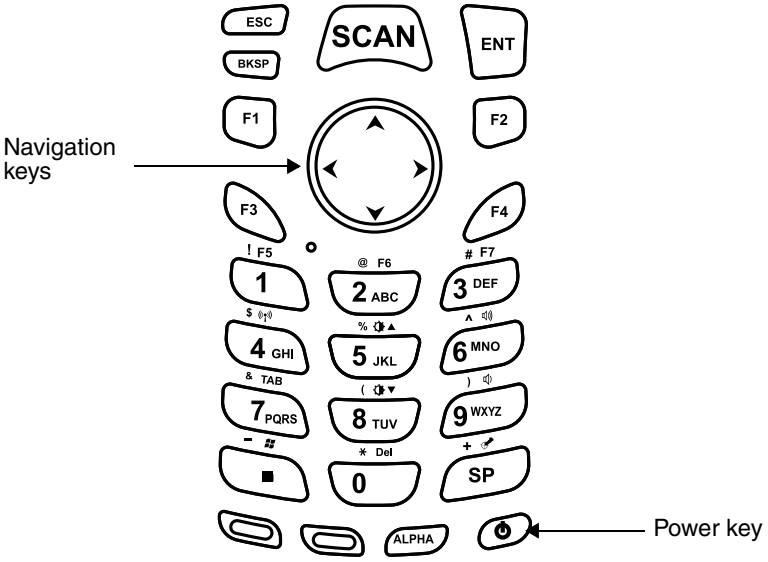
Processor	Marvell PXA 300 624MHz
Memory	64MB RAM X 128MB Flash
Storage Expansion	User accessible Micro SD Card slot
Display	2.4 in. transmissive active matrix 65K color LCD with backlight, QVGA (240 x 320)
Engine	Laser: 4813 Laser Engine Imager: 5300SR VGA Area Imager with High-Vis bracket aimer
Keypad	28-key shifted alpha numeric with backlit keys
Audio	Built-in speaker
I/O	Full speed USB 1.1 from cradle (or I/O cable); RS232 (115 Kbps) from cradle
Battery	Standard Li-ion battery 3.7V / 2200 mAh / 8.1 Wh Extended Li-ion battery 3.7V / 3300 mAh / 12.2 Wh (includes extended battery door)
Expected Hours of Operation	8+ hours (with scan and continuously transmitting)*
Charging	5V/2A input through bottom access or USB/Serial connector
Expected Charge Time	Standard Capacity: 2200mAh - four hours Extended Capacity: 3300mAh - six hours
Charging Peripherals	AC wall adapter and Charger (PSC11R-050)/Communication Cable HomeBase–single-bay terminal charge/communicate Quad Charger–four-slot battery pack charger (DSA-0421S-03 1)
WPAN/WLAN (optional)	Bluetooth Class II (10 m) v2.0 Enhanced Data Rate (EDR) with on-board antenna. BQB certified Dual Mode 802.11 b/g (11 Mbps/54 Mbps) with internal antenna
WLAN Security	WEP, 802.1X, TKIP, MD5, EAP-TLS, EAP-TTLS, WPA-PSK, WPA v2.0, PEAP
Operating Temperature	14° to122°F (-10° to 50°C)
Charging Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	-4° to 158°F (-20° to 70°C)
Humidity	95% humidity, non-condensing
Construction	High impact resistant PC housings Magnesium alloy internal chassis with component shock mounts
Drop	4 ft. (1.2m) multiple drops to concrete, all axis, across operating temperature range
ESD	Direct: ± 8k Vdc

Environmental	Independently certified to meet IP54 standards for moisture and particle resistance
Dimensions	157 mm long x 57 mm wide x 41 mm deep (6.18” x 2.24” x 1.61”)
Weight	232 g (8.18 oz) including standard battery pack with 4813 Laser Engine 228 g (8.04 oz) including standard battery pack with 5300SR Imager Engine
Scanner / Decode Capabilities	4813: 1D Laser Engine. Decodes all standard 1D codes. 5300SR: 2D Imager with Adaptus Technology and Laser Aimer. Decodes all standard 1D, 2D, Postal, and OCR codes.
Regulatory and Compliance	**Safety:** CCC, CB **EMC:** SRRC, WPC

* For standard battery pack. Battery life varies with application and use case.

4 Using the Keypad

Overview



Navigation Keys

Located in the center of the keypad for easy access with either hand, the navigation keys enable you to move the cursor up and down lines and from character to character.

Basic Keys

Name	Function
ALPHA	Toggles the keypad between alpha (upper and lowercase), numeric, and mouse pointer modes. Indicator changes accordingly on the command bar.
Backspace	Backspace moves the cursor back one space. If you are typing text, a character is deleted each time you press the backspace key.
Control	Modifies the next key pressed to type specific characters.
Escape	Cancels an action.
Enter	Performs the same function as the Enter key on a workstation.
Power	Suspends and resumes the terminal.
Scan	Activates the image engine to scan a bar code or take an image, if applicable.
Space	Moves the cursor one space forward. If you are typing text, it moves the text one space forward as well.

Alpha/Numeric/Mouse Pointer Modes

The keypad defaults to numeric mode. Use the ALPHA key to toggle between numeric, alpha, and mouse pointer modes. Pressing the ALPHA key once locks the keypad in numeric mode, alpha mode (lowercase), alpha mode (uppercase), or mouse pointer mode.

The command bar on the screen displays an icon that indicates the alpha/numeric status of the keypad.

Icon	Keypad Status
	The keypad is in lowercase alpha mode.
	The keypad is in uppercase alpha mode.
	The keypad is in numeric mode.
	The keypad is in navigation mode.

Alpha Indicators on the Number Keys

Each number key displays the characters typed when you press that key in alpha mode.

Note that when typing in alpha mode, you must use the same multi-press method you would use when typing letters on a phone keypad. Each key press types the next letter in the sequence as displayed by the alpha indicator.

Mouse Pointer Mode

Key Combination	Function
1	Move pointer diagonally to the upper left.
2	Move pointer up.
3	Move pointer diagonally to the upper right.
4	Move pointer left.
5	To select object.
6	Move pointer right.
7	Move pointer diagonally to the lower left.
8	Move pointer down.
9	Move pointer diagonally to the lower right.

Function Key Combinations

The Function key (FUNC) modifies the next key pressed to perform specific functions.

Key Combination	Function
FUNC + 1	F5
FUNC + 2	F6
FUNC + 3	F7
FUNC + 4	Toggle the wireless radio on and off
FUNC + 5	Increase screen brightness
FUNC + 6	Increase volume
FUNC + 7	Tab
FUNC + 8	Decrease screen brightness
FUNC + 9	Decrease volume
FUNC + .	Start menu
FUNC + 0	Delete
FUNC + SP	Align the screen (Press ESC to exit)

The keypad is color-coded in blue to indicate these key combinations.

*Note: The color-coded indicators are located **above** each key.*

CTRL Key Combinations

The Control key (CTRL) modifies the next key pressed to type specific characters.

Key Combination	Function
CTRL + 1	!
CTRL + 2	@
CTRL + 3	#
CTRL + 4	$
CTRL + 5	%
CTRL + 6	^
CTRL + 7	&
CTRL + 8	(
CTRL + 9	)
CTRL + .	- (minus)
CTRL + 0	*
CTRL + SP	+ (plus)

The keypad is color-coded in red to indicate these key combinations.

*Note: The color-coded indicators are located **above** each key.*

Program Buttons

Buttons can be programmed to execute different functions using the Program Button program in the Control Panel. Press and hold the Function (FUNC) key and press the appropriate function key to execute the indicated function.

5 Using the Laser Engine

Overview

If your terminal is equipped with a laser engine, you will be able to read all popular 1D bar codes.

Available Laser Engines

5100s are equipped with 4813 1D laser engines.

Depth of Field

4813 Standard Range

	5.2 mil Linear	7.5 mil Linear	10.4 mil EAN 13	10.4 mil Code 128	13 mil UPC	19.5 mil UPC
Working Range*	(.013cm)	(.019cm)	(.026cm)	(.026cm)	(.033cm)	(.049cm)
Near	2.8 in. (7.0cm)	2.2 in. (5.7cm)	2.0 in. (5.0cm)	2.0 in. (5.0cm)	2.0 in. (5.0cm)	3.0 in. (7.5cm)
Far	3.7 in. (9.5cm)	6.7 in. (17.1cm)	10.0 in. (25.4cm)	8.3 in. (21.0cm)	10.0 in. (25.4cm)	11.8 in. (30.0cm)

*Data characterized at 23°C and 0 lux ambient light.

Supported Bar Code Symbologies

Symbology Type	Symbology Name	
1D Symbologies	Codabar Code 3 of 9 Code 11 Code 93 Code 128 EAN-8 EAN-13 GS1 Databar Interleaved 2 of 5 Matrix 2 of 5	Plessey Standard 2 of 5 Hongkong 2 of 5 NEC 2 of 5 Straight 2 of 5 IATA 13 Digit Straight 2 of 5 IATA 15 Digit Telepen Trioptic Code GS1-128 UPC-A and UPC-E

Activating the Engine

When a scanning application is open, press the Scan key to activate the laser engine.

Using Demos

Optimus Demos are software utilities loaded on all Optimus terminals that demonstrate the advanced features of the terminal.

To access the demo, select **Start** -> **Programs** -> **Demos** -> **Scan Demo**.

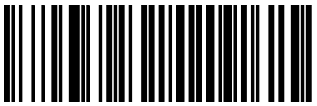
To Decode a Bar Code

1. Select **Start** -> **Programs** -> **Demos** -> **Scan Demo**.
2. Position the Optimus terminal over the sample bar code below.
   A range of 4–10 inches (10–25 cm) from the bar code is recommended.
3. Project the aiming beam by pressing and holding the Scan key. The Scan LED lights red.
4. Center the aimer over the bar code.
5. When the bar code is successfully decoded, the decode LED lights green and the terminal beeps.

Sample Bar Codes

You can use the following bar code to verify decoding:

Sample 128



Code 128

The aiming beam is smaller when the terminal is held closer to the code and larger when the terminal is held farther from the code. Symbologies with smaller bars or elements (mil size) should be read closer to the unit whereas larger bars or elements (mil size) should be read farther from the unit.

6 Using the Image Engine

Overview

If your terminal is equipped with a image engine, it houses a compact image engine using Adaptus™ Imaging Technology that instantly reads all popular 1D and 2D bar codes and supports omni-directional aiming and decoding. The image engine can also capture digital images, such as signatures and pictures.

Available Image Engines

5100s are equipped with 5300 Standard Range (5300SR) image engines.

Depth of Field

5300 Standard Range (5300SR)

	8.3 mil Linear	**10 mil PDF417**	**13 mil UPC**	**15 mil Data Matrix**	**15 mil QR**	**35 mil MaxiCode**
Working Range*	(.020cm)	(.025cm)	(.033cm)	(.038cm)	(.038cm)	(.089cm)
Near	3.5 in. (8.9cm)	3.1 in. (7.9cm)	2.1 in. (5.3cm)	2.3 in. 5.8cm)	3.1 in. (7.9cm)	2.0 in. (5.1cm)
Far	7.6 in. (19.3cm)	9 in. (22.9cm)	13.2 in. (33.5cm)	10.2 in. (25.9cm)	8.8 in. (22.4cm)	13.0 in. (33cm)

*Data characterized at 23°C and 0 lux ambient light.

Supported Bar Code Symbologies

Symbology Type	Symbology Name	
1D Symbologies	Codabar Code 3 of 9 Code 11 Code 32 Pharmaceutical (PARAF) Code 93 Code 128 EAN with Add-On EAN with Extended Coupon Code EAN-13 GS1 Databar	Interleaved 2 or 5 Matrix 2 of 5 Plessey PosiCode Straight 2 of 5 IATA Straight 2 of 5 Industrial Telepen Trioptic Code GS1-128 UPC and UPC-A
2D Symbologies	Aztec Code 16K Composite Data Matrix Grid Matrix GS1 Databar Han Xin MaxiCode OCR PDF417 QR Code	
Composite Codes	Aztec Mesa Codablock F EAN·UCC GS1 Databar-14	
OCR	OCR-A OCR-B OCR-US Money Font	
Postal Codes	Postnet and most international 4 state codes Australian Post British Post Canadian Post China Post Japanese Post KIX (Netherlands) Post Korea Post Planet Code	

Activating the Engine

When a scanning application is open, press the Scan key to activate the image engine.

Using Demos

Optimus Demos are software utilities loaded on all Optimus terminals that demonstrate the advanced features of the terminal. There are two Demos that feature the image engine: Image Demo and Scan Demo.

To access these demos, select **Start** -> **Programs** -> **Demos**.

- Select **Scan Demo** to verify decoding, or
- Select **Image Demo** to verify imaging.

Decoding

The Optimus terminal supports two types of image decoding: full-area imaging and Advanced Linear Decoding (ALD).

Full-area Imaging

With full-area imaging the Optimus terminal supports omni-directional aiming meaning that a positive read can be obtained from many positions. For details, see see Omni-Directional Scanning Positions on page 6-4.

ALD

ALD provides fast reading of linear (1D) and stacked linear bar codes (PDF417). For the best read, the aiming pattern should be centered horizontally across the bar code. When ALD is enabled, the reader does not read matrix or postal codes.

To Decode a Bar Code

1. Select **Start** -> **Programs** -> **Demos** -> **Scan Demo**.
2. Position the Optimus terminal over one of the sample bar codes below.
   A range of 4–10 inches (10–25 cm) from the bar code is recommended.
3. Project the aiming brackets by pressing and holding the Scan key. The Scan LED lights red.
4. Center the aimer crosshair over the bar code. The aiming beam should be oriented in line with the bar code to achieve optimal decoding; Omni-Directional Scanning Positions, page 6-4
5. When the bar code is successfully decoded, the decode LED lights green and the terminal beeps.

Sample Bar Codes

You can use the following bar codes to verify decoding:

Sample 128

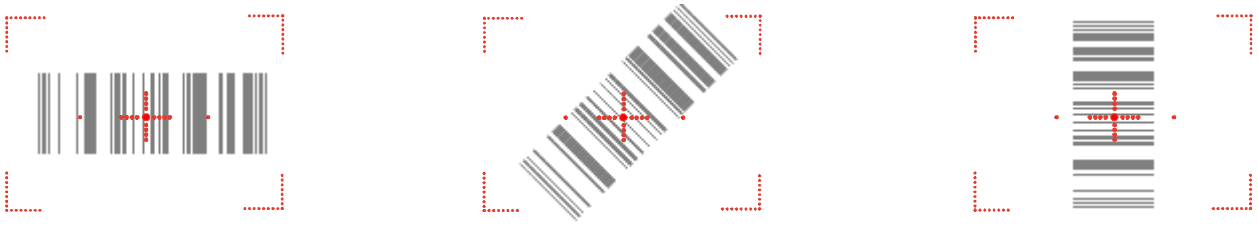
Code 128

Sample PDF417

PDF417 Test Message

Omni-Directional Scanning Positions

The high-vis aiming pattern frames the bar code to provide you with the best scanning performance.



Note: To achieve the best read, the aiming beam should be centered horizontally across the bar code.

The aiming pattern is smaller when the terminal is held closer to the code and larger when the terminal is held farther from the code. Symbologies with smaller bars or elements (mil size) should be read closer to the unit whereas larger bars or elements (mil size) should be read farther from the unit.

Capturing Images

The image-capture process is an intuitive, split-second operation for experienced users. By following basic guidelines, however, new users can easily develop their own technique and, with practice, quickly learn to adapt to different application environments.

Image Preview

When the imaging process is initiated, the touch screen displays a preview of the object. This is a live video image of what the imager is currently viewing and has a slightly degraded appearance compared to the captured image. This is normal; the captured image has a higher resolution.

File Formats

The Optimus terminal is capable of saving images in a BMP file format.

File Size

Digital images have a maximum image size of 752 x 480 pixels and may have up to a 256 grayscale image definition. The image quality and related file size are determined by the data compression method used by the software application used to take the image. The average size of the image file is approximately 300–400K. However, the size of the image depends on image content; the more complex the content, the larger the file size.

Taking an Image

1. Select **Start** -> **Programs** -> **Demos** -> **Image Demo**.
2. Point the Optimus terminal at the object.
3. Press the Scan key to activate the engine. The screen displays a preview of the object.
4. Adjust the terminal's position until the preview on the screen is as you want it to appear in the image.
5. Hold the terminal still and release the Scan key.
   The screen flashes, and the captured image appears on the screen.
6. By default, the image is saved to the My Documents folder in My Device.
   To save the image to another location, select **File** -> **Save As**.

High-Vis Aiming Pattern

You can enable the aiming pattern for imaging in the Image Demo application.

1. Select **Start** -> **Programs** -> **Demos** -> **Imaging Demo** -> **Setup** menu -> **Aimer**.
2. The aiming pattern is now enabled for imaging.

Uploading Images

Image files can be transmitted to a host workstation via

- Microsoft ActiveSync and an Optimus communication peripheral
- Wireless radio: 802.11b/g and/or Bluetooth

7 Communication

Communication Options

Opitmus terminals offer several communication options including Microsoft ActiveSync and wireless radios.

I/O Connector (Wired Communication)

The mechanical connector on the bottom panel (see I/O Connector on page 3-8) connects the terminal to various Optimus communication peripherals that connect to a host workstation via USB (1.1 or higher), thus enabling ActiveSync communication.

For more information, see Connecting and Synchronizing the Terminal and Workstation on page 7-2.

Wireless Radios (Wireless Communication)

5100s can be equipped with an 802.11b/g and Bluetooth radio or a combination of these radios.

For more information, see Wireless Radios on page 7-5.

Installing Additional Software

Optimus terminals ship with the operating system, radio drivers, and custom Honeywell software already installed. These are the default programs that install when your terminal first boots up. You can install additional software programs on the terminal provided that the following parameters are met:

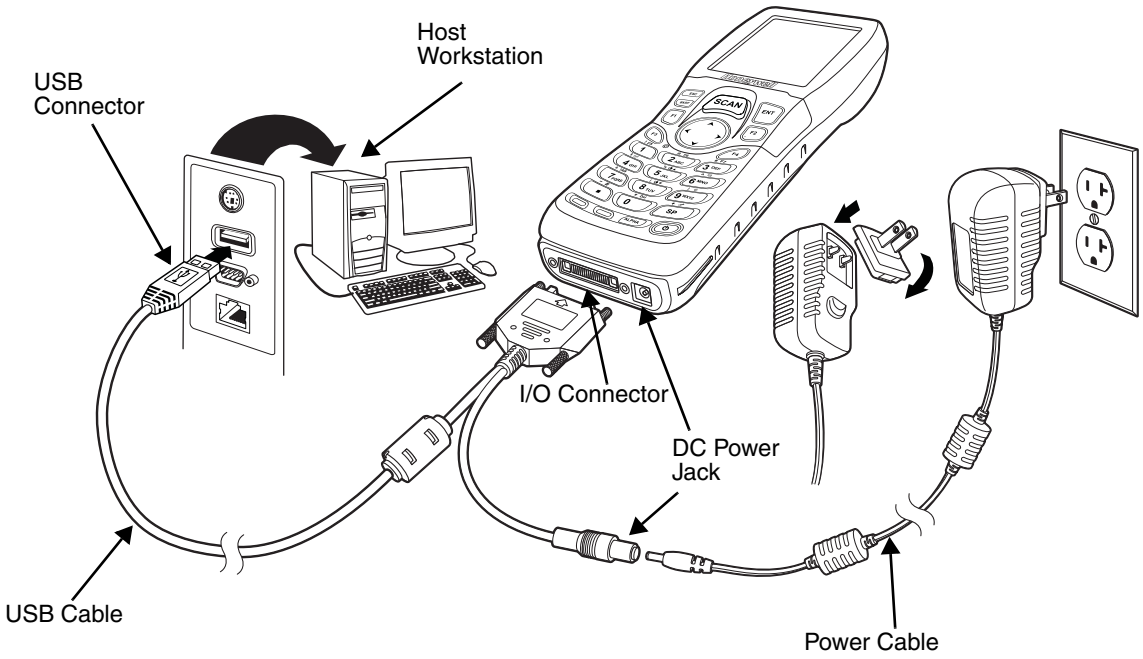
- the software program was created for a Windows CE Core device.
- the terminal has enough memory to store and run the program.
- the program has an EXE, CAB, or DLL extension.

When selecting programs, verify that the program and version of the program are designed for the Windows CE 5.0 Core and the terminal's processor. You can verify your processor by selecting **Start** -> **Settings** -> **Control Panel** -> **System** -> **General** tab. Make a note of the information in the **Processor** field.

To install additional software, see Adding Programs Using ActiveSync or Windows Mobile Device Center on page 7-5.

Connecting the USB Charging/Communication Cable

To facilitate USB communication between the Optimus terminal and the host workstation, you may connect your unit to a host by using either the optional Optimus 5100 USB Communication Cable or HomeBase. If you use the Communication Cable, insert the cable into the bottom of the terminal lining up the terminal's I/O connector with the cable unit's connector. Connect the USB cable to the workstation and the power cable to the power source, if required.



Connecting and Synchronizing the Terminal and Workstation

To synchronize data between the terminal and the workstation, ActiveSync (version 4.5 or higher) or Windows Mobile Device Center must be installed and configured for the appropriate communication type on the host workstation (Windows-based PC) and the Optimus terminal. Optimus terminals ship with ActiveSync already installed. Therefore, if ActiveSync is already installed on the host workstation, you just need to connect the Optimus terminal to the host workstation (via Optimus peripheral) to initiate communication.

If ActiveSync (4.5 or higher) or Windows Mobile Device Center is not installed on the host workstation, you can download and install the most current version of the software from the Microsoft Web site (http://go.microsoft.com/fwlink/?LinkId=147001).

Note: ActiveSync on your Dolphin terminal works with Windows Mobile Device Center on host workstations running Windows Vista or Windows 7 and with ActiveSync on host workstations running Windows XP. For detailed information on ActiveSync and WMDC visit the Microsoft Windows Phone Web site.

⚠ *When communicating via ActiveSync or Windows Mobile Device Center, your terminal is designed to be connected to the host workstation with a communication peripheral sold/manufactured by Honeywell, such as the charge/communication. Use of any peripherals not sold/manufactured by Honeywell may cause damage not covered by the warranty.*

Communication Type

The 5100 supports the following type of communication via ActiveSync through its I/O Connector (see page 3-8) on the bottom panel:

USB The USB cable and hardware peripherals allow the Optimus terminal to communicate with a workstation through a USB port or to a network through a USB hub. The Optimus terminal supports full-speed USB communication (USB 1.1); maximum data transfer rate is 12 Mbps. The Optimus terminal defaults to USB communication out of the box.

Hardware Requirements for Setup

- Optimus communication peripheral
- Optimus power cable
- USB Cable (for USB communication)

Software Requirements for Communication

- ActiveSync (v4.5 or higher) or Windows Mobile Device Center installed and configured on the host workstation (PC), see Setting Up the Host Workstation on page 7-3.
- Windows 98 Second Edition, Windows ME, Windows 2000, WindowsNT (4.0 SP6 or higher), Windows XP, Windows Vista, and Windows 7 operating systems.

Setting Up the Host Workstation

To synchronize data between the terminal and the workstation, ActiveSync (v4.5 or higher) or Windows Mobile Device Center must be configured for same communication type on both the host workstation and the Dolphin terminal.

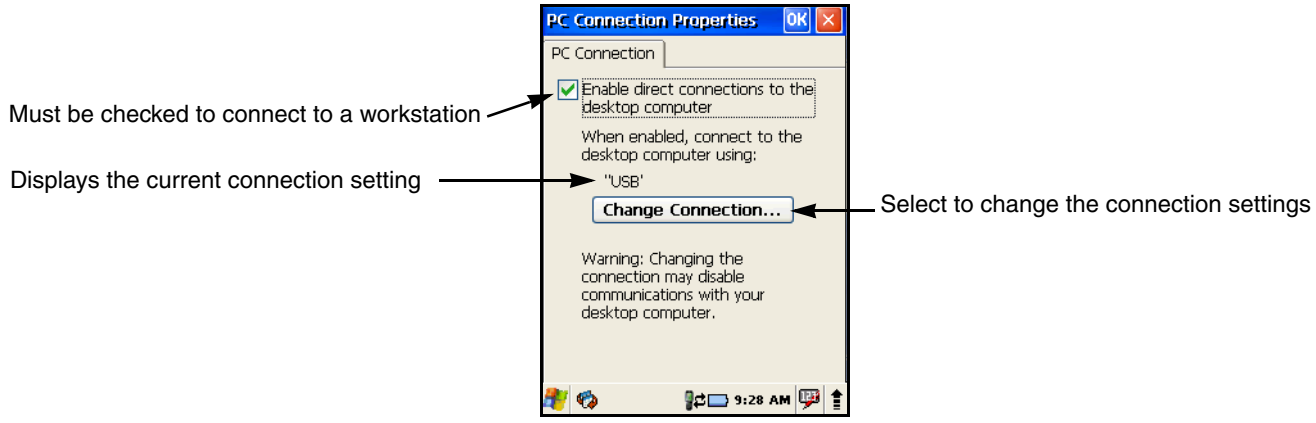
ActiveSync

Verify that ActiveSync is configured to use the appropriate communication type.

1. In the ActiveSync window on your workstation, select **File ->** **Connection Settings**.
2. Check the box next to “Allow USB connections”.

Setting Up the Optimus Terminal

The Optimus terminal defaults to USB communication out of the box. To verify and/or change the default setting, select **Start** -> **Settings** -> **Control Panel** -> **PC Connection**.



Select **Change Connection** to change the current settings.

Connection Options	Select this option to …
'USB'	Establish a USB connection.

Communicating with the Optimus Terminal

After setting up both the workstation and the terminal:

1. Connect the Optimus terminal to a communication peripheral.
2. ActiveSync or Windows Mobile Device Center should open and connect automatically to the Optimus terminal.

Synchronizing with the Host Workstation

After setup, synchronization begins automatically whenever the terminal's mechanical connector connects to an Optimus peripheral that is connected to a host workstation with ActiveSync or Windows Mobile Device Center installed. For additional information visit the Microsoft Web site (http://go.microsot.com/fwlink/?LinkId=147001).

Exploring the Terminal from the Workstation

ActiveSync

1. Open the main ActiveSync window (on the desktop).
2. Click **Explore**. This opens the Mobile Device folder for the terminal in Windows Explorer.
3. The Optimus terminal is now treated as a mass storage device, and transferring files is as simple as dragging and dropping or copying and pasting.

Windows Mobile Device Center

1. Open Windows Mobile Device Center (on the desktop).
2. Click **File Management**. This opens the Mobile Device folder for the terminal.
3. The Optimus terminal is now treated as a mass storage device, and transferring files is as simple as dragging and dropping or copying and pasting.

Adding Programs Using ActiveSync or Windows Mobile Device Center

*When selecting programs, verify that the program and version of the program are designed for the Windows CE 5.0 Core and the terminal's processor. You can verify your processor by selecting **Start** -> **Settings** -> **Control Panel** -> **System** -> **General** tab. Make a note of the information in the Processor field.*

Generally, software for Windows CE Core devices must be installed to the host workstation first, then transferred to the Optimus terminal.

1. Download the program to the workstation from either the Internet or the install CD. You may see a single *.exe or setup.exe file, a *.cab file, or *.dll. (There may also be several versions of files for different device types and processors.)
2. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
3. Connect the terminal to the workstation via an Optimus communication peripheral.

If the File is an Installer

An installer program is one that installs to the workstation and the terminal simultaneously; one process installs to both devices.

1. On the workstation, double-click the *.exe or *.setup.exe file. The installation wizard begins.
2. Follow the directions on the workstation screen.
   The installation process includes transferring the software to the terminal.

If the File is Not an Installer

Some programs cannot be installed on workstations because they are designed exclusively for Windows CE Core devices. In these cases, the appropriate files must be stored on the host workstation and transferred to the terminal via ActiveSync Explore or Windows Device Mobile File Management.

Note: If an installer because an error message stating that the program is valid but designed for a different type of computer appears when you try to install the program on the workstation, the program is not an installer.

1. If you cannot find any installation instructions for the program in the Read Me file or documentation, do one of the following:
   a. Open **ActiveSync** on the workstation and click **Explore**, or
   b. Open **Windows Mobile Device Center** and click **File Management**.
2. On the workstation, navigate to the workstation folder containing the program file(s) and copy them to the **Program Files** folder on the terminal.
3. On the terminal Desktop, select **My Device** and, in Windows Explorer, navigate to the folder where the program is located.
4. Select the program file to install it.
   If you copied the file to the **Autoinstall** folder (`\Autoinstall\Cabfile`), you can choose to install the program by performing a soft reset. The program installs as part of initialization.
5. After installation is complete, access the program by selecting **Start** -> **Programs**, and the program appears on the Programs screen. Select the icon to open the program.

Wireless Radios

There are two radio options: 802.11b/g and Bluetooth.

1. **802.11b/g** (WPAN/WLAN configuration).

2. **Bluetooth** (WPAN configuration): see Bluetooth Handler on page 8-1.

Connecting the Terminal to a Wireless Network

You connect the terminal to a wireless network through the on-board radio (802.11b/g and/or Bluetooth). Each radio has its own configuration program and requires specific information about the wireless network to connect. Successful connection depends on your network infrastructure about which you will need specific information from your network administrator.

WLAN (802.11b/g Radio)

5100s can have a 2.4 GHz 802.11b/g WLAN (Wireless Local Area Network) radio that uses Direct Sequence Spread Spectrum (DSSS) technology. The radio is interoperable with other 802.11b/g, Wi-Fi-compliant products including access points (APs), workstations via PC card adapters, and other wireless portable devices.

By default, the 802.11b/g radio is powered-off (i.e., disabled) “out of the box.” To power it on (i.e., enable), press the vertical arrow (bottom right corner of screen) and select **Turn Wireless LAN On**. The enable/disable state of the radio will survive subsequent soft and hard resets. The next step is to configure the connection parameters of the radio to connect to a wireless network.

Configuring the WLAN Radio

The WLAN radio is configured in the WiFi Manager, which you access by selecting the program icon in the command bar.

8 Bluetooth Handler

Bluetooth wireless technology is a short-range communications technology to connect portable and/or fixed devices while maintaining high levels of security.

Enabling the Bluetooth Radio

1. Select the **UP** arrow in the lower, right portion of the display.
2. Select **Turn Bluetooth On**.

The Bluetooth icon appears in the task bar.

Connecting to Other Devices

Before connecting to another device, make sure that the Bluetooth connection on the other device is enabled.

1. Select on the Bluetooth icon in the task bar.

The Bluetooth Handler appears on the screen.

2. Select **Scan Device**.

The available services of all devices / profiles in range display in the Bluetooth Handler.

Pairing Bluetooth Devices

Connecting Bluetooth devices usually requires that they be paired; the same passkey must be entered for each device. If you want to connect the 5100 to a device without any input method (e.g., printers, headsets), refer to the user documentation that accompanied the device for pairing information.

1. Select on the desired device / profile in the Bluetooth Handler.
2. Select **Trusted** from the drop down menu.

Once asked if you need to authenticate the device,

3. Select on the **Yes** button.
4. Enter 4 random digits and select **Yes**.
5. Enter the same digits on the other device when prompted.
6. After pairing, select on the selected device / profile and select **Active**.

Setting Up a Bluetooth Printer

1. Make sure that the Bluetooth printer is on and activated.
2. If not done so already, turn Bluetooth On (by selecting the vertical arrow on the Command Bar).
3. Select **Serial** tab.
4. Select **Scan Device**, which runs a Bluetooth Inquiry, then SDP Query.
5. If you see your Bluetooth printer device displayed, you can select **Cancel** to stop the search.

OR

Wait until all Bluetooth devices in range have been scanned and the **Scan Dialog** window appears.

6. Scroll through the list until your Bluetooth printer device is found. You may select any device in the list to display its MAC address.
7. Highlight the Bluetooth printer device and select the **Select** button.
8. When the COM port selection appears, select **COM7** and select **OK**.
9. If successful, the COM port and MAC address of the device appears under the list of **Registered Bluetooth Virtual COM ports**.
10. Select **OK** to exit the Bluetooth Handler.
11. One of the ways to test the connection to the printer is to follow the steps below:
    a. Select **Start -> Programs -> Demos -> Print Demo**.
    b. Select **Zebra (BT) Barcodes Print**.
    c. If the connection is successful, the bar code prints.

9 Optimus HomeBase Device

Overview

As the hub of your Optimus 5100 system, the Optimus HomeBase charging and communication cradle supports full-speed USB 1.1 and RS-232 communication with a workstation.

Battery Charging

The base completes a full charge of the main battery pack in four hours for the standard capacity 2200mAh pack and six hours for the extended capacity 3300mAh pack.

In addition to charging, the base powers the terminal's intelligent battery charging system, which protects the battery from being damaged by overcharging. The terminal senses when a battery pack is fully charged and automatically turns off the charger. If the battery voltage drops below the charge threshold, the charger turns on again to maintain the battery at full capacity. As a result, Optimus terminals may be stored in the base indefinitely without damage to the terminals, battery packs, or peripherals. For prolonged storage, see Storage Guidelines on page 3-11. The base can also charge a second battery while the terminal is positioned in the base. See Charging a Spare Battery on page 9-5.

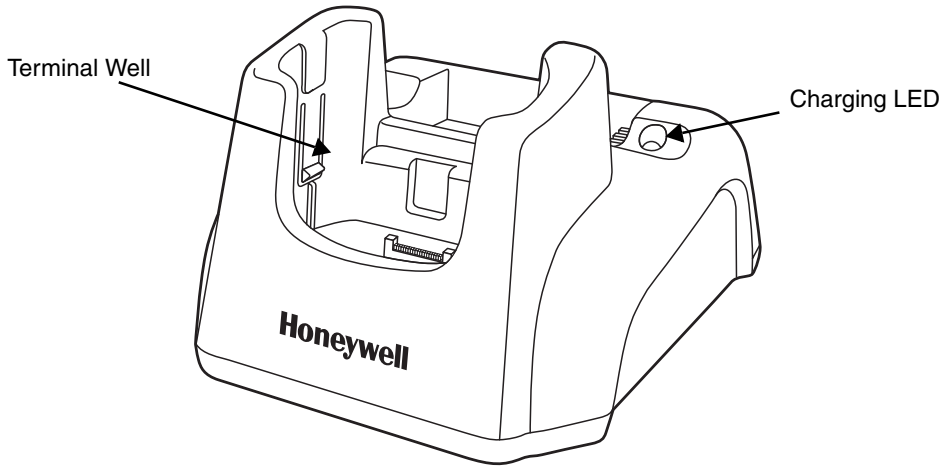
Power Supply

The power cable that ships with each terminal also powers the base.

We recommend use of Honeywell peripherals, power cables, and power adapters. Use of any non-Honeywell peripherals, cables, or power adapters may cause damage not covered by the warranty.

We recommend use of Honeywell Li-Ion battery packs. Use of any non-Honeywell battery may result in damage not covered by the warranty. DO NOT attempt to charge damp/wet mobile computers or batteries. All components must be dry before connecting to an external power source.

Front Panel



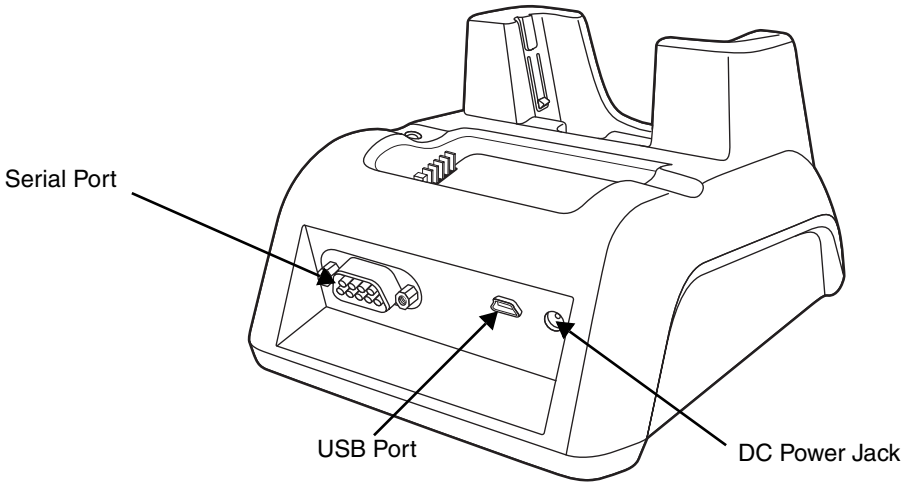
Terminal Well

Place the Optimus terminal in the terminal well to communicate with a host device, power the terminal, and charge the terminal's battery. Make sure that the device is securely seated.

Rubber Feet

The bottom panel has four rubber feet to stabilize the unit on a flat surface. You can set the base on a dry, stable surface, such as a desktop or workbench near an electrical outlet.

Back Panel



DC Power Jack

Connect the power cable to this power jack; see Powering the Optimus HomeBase Device on page 9-3.

USB Port

The USB port is full-speed (v1.1). Using the USB cable, you can connect the base to a USB-compliant device to facilitate USB communication to and from the terminal. USB communication occurs through Microsoft ActiveSync (v.4.1 or higher). For more information about ActiveSync setup, see Connecting and Synchronizing the Terminal and Workstation on page 7-2.

Serial Port

The serial port supports serial communication between the terminal and another device. Note that the connector is a DB9 Male connector, requiring a female connector on the serial cable. The following four signals are supported:

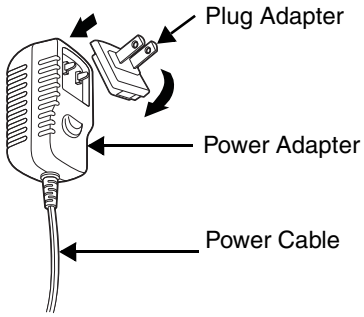
- Transmitted Data
- Received Data
- Request to Send
- Clear to Send

Note: ActiveSync is not supported over the serial port.

Powering the Optimus HomeBase Device

The terminal requires 5 volts DC input for communication and battery charging; the power adapter on the power cable converts the voltage from the power source to 5 volts DC. Only power adapter cables from Honeywell convert the voltage appropriately.

The same power cable that ships with each terminal can be used to power the base. This cable contains a plug adapter for each geography.



1. Attach the appropriate plug adapter to the power adapter.
2. Plug the power cable into the power source.
3. Plug the connector into the DC power jack on the back panel. The base is now powered.

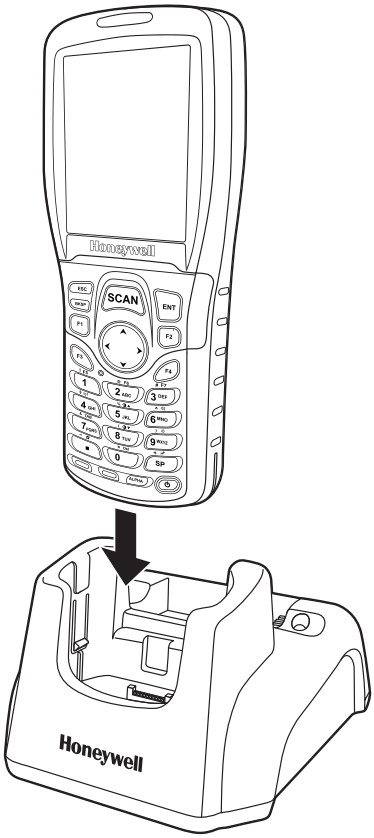
When a terminal is properly seated, the base powers the terminal, charges the terminal's main battery pack, and launches ActiveSync (see Connecting and Synchronizing the Terminal and Workstation on page 7-2).

Honeywell recommends that you leave the base connected to its power source at all times, so that it is always ready to use.

Charging the Main Battery

The base powers the terminal and fully charges its main battery pack in 4 or 6 hours depending on the battery.

As battery packs charge, the charging circuitry follows the two-step charging process (CC-CV) that is recommended for Li-Ion batteries. The process monitors changes in temperature, current, and voltage.



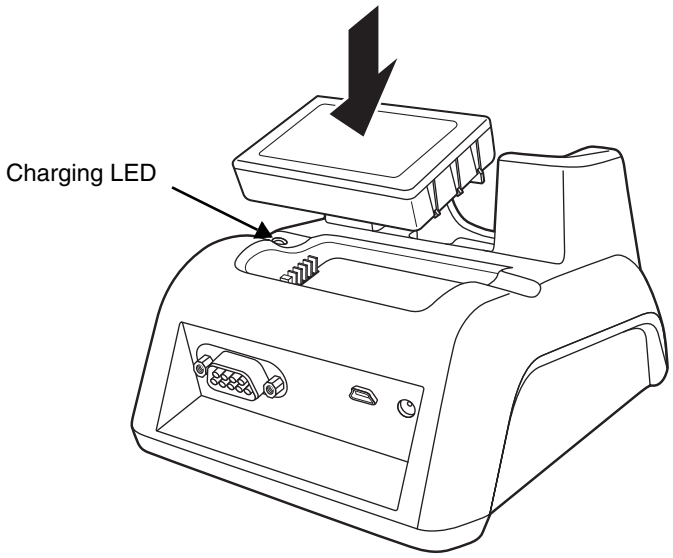
Inserting a Terminal

1. Install the battery pack in the terminal; see Install the Main Battery on page 2-1.
2. Power the base; see Powering the Optimus HomeBase Device on page 9-3.
3. Slide the terminal into the terminal well making certain that the terminal is seated properly.
4. The battery pack begins charging.

⚠ *Ensure all components are dry prior to mating terminals/ batteries with peripheral devices. Mating wet components may cause damage not covered by the warranty.*

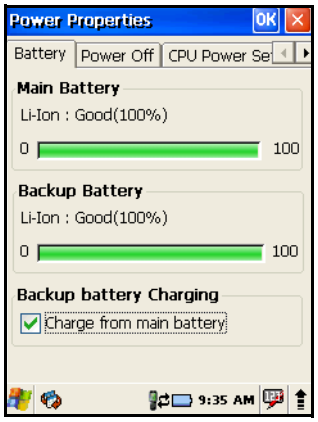
Charging a Spare Battery

The base can also charge a second battery while the terminal is positioned in the base. The second battery can be inserted in the battery charging well in back of the terminal connection. Angle the battery as shown. Once the connectors engage, the LED lights. If the LED is red, the unit is charging; if it is green, the charge is complete.



Checking Battery Power

To check battery power while the terminal is operating, select **Start** -> **Settings** -> **Control Panel** -> **Power**.



Technical Specifications

Structural	
Dimensions	5.3 in. high X 4.5 in. wide X 3.1 in. deep (13.5 cm. X 11.4 cm. X 7.9 cm.)
Weight	11.0 oz. (313g)
Material	Polycarbonate
Color	Black
Environmental	
Operating Temperature	14° to 122°F (-10° to 50°C)
Storage Temperature	-4° to 158°F (-20° to +70°C)
Charging Temperature	32° to 104°F (0° to 40°C)
Electrical Static Discharge	**Air**: ± 15k Vdc **Direct:** ± 8k Vdc
Humidity	90% relative humidity (non-condensing)
Power Supply	
Input (Universal) (from the power source)	100–240 Volts, 0.3 A 50–60Hz Included with Optimus terminal
Output (to the base)	5 Volts DC, 2.0 A
Charging	
Standard Charge	Standard Capacity: 2200mAh - four hours Extended Capacity: 3300mAh - six hours
Max Charging Current	2A Max
Standby Current	<100mA
Status LED	**Green:** charged **Red:** charging
Communication	
Interface	USB Mini-B Male connector supports data transmission of up to12 Mbps OR Standard DB9 serial connector supports data transmission up to 115 Kbps
Agency Approvals	
Power Supply:	UL listed TUV licensed
Charging:	CCC
Fire Retardant:	UL 94V-O

10 Optimus QuadCharger Device

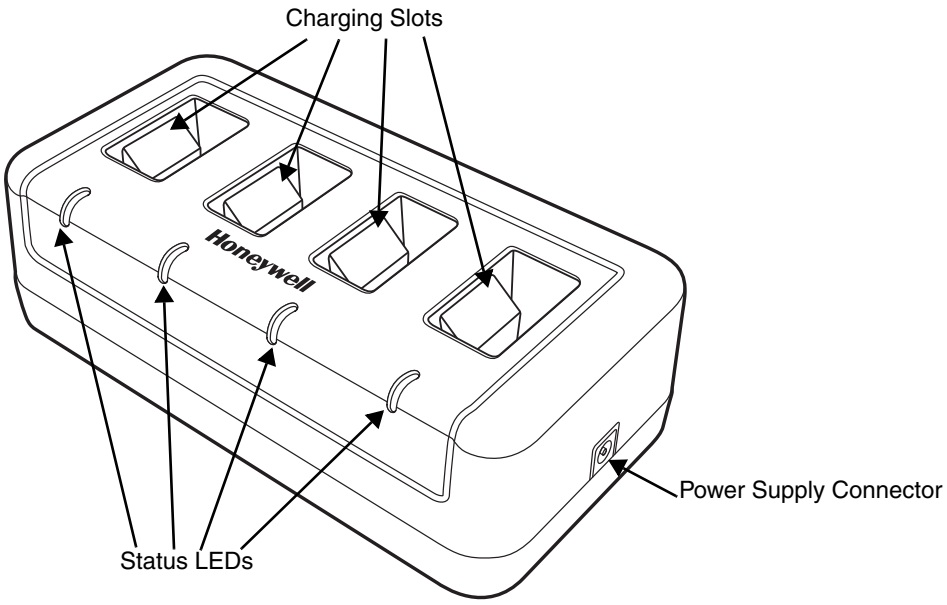
Overview

The Optimus QuadCharger device is a four-slot charging station that charges up to four Li-ion battery packs—both standard capacity 2200mAh and extended capacity 3300mAh—in four hours and six hours respectively. For more details about charging, see Battery Charging on page 10-2.

We recommend use of Honeywell peripherals, power cables, and power adapters. Use of any non-Honeywell peripherals, cables, or power adapters may cause damage not covered by the warranty.

We recommend use of Honeywell Li-Ion battery packs. Use of any non-Honeywell battery may result in damage not covered by the warranty. DO NOT attempt to charge damp/wet mobile computers or batteries. All components must be dry before connecting to an external power source.

QuadCharger Device



Charging Slots

The charger contains four charging slots. Each slot holds one battery. When a battery is placed in a slot, it immediately begins charging and its Status LED lights.

Status LEDs

A status LED is located at the end of each of the four battery slots. The color of the LED indicates the charge status of the battery in the slot.

Green	The battery has completed its charge cycle and is ready for use.
Red	The battery is charging.

Power Supply Connector

Use this connector to attach the power supply to the charger. The universal power supply accepts input voltages between 90–265 volts.

Battery Charging

Charging Process

This charger charges 5100 standard capacity Li-ion 2200mAh battery packs in four hours and extended capacity 3300mAh packs in six hours. Each charging slot works independently of the other three. As battery packs charge, the charging circuitry follows the two-step charging process (CC-CV) that is recommended for Li-Ion batteries. The process monitors changes in temperature, current, and voltage.

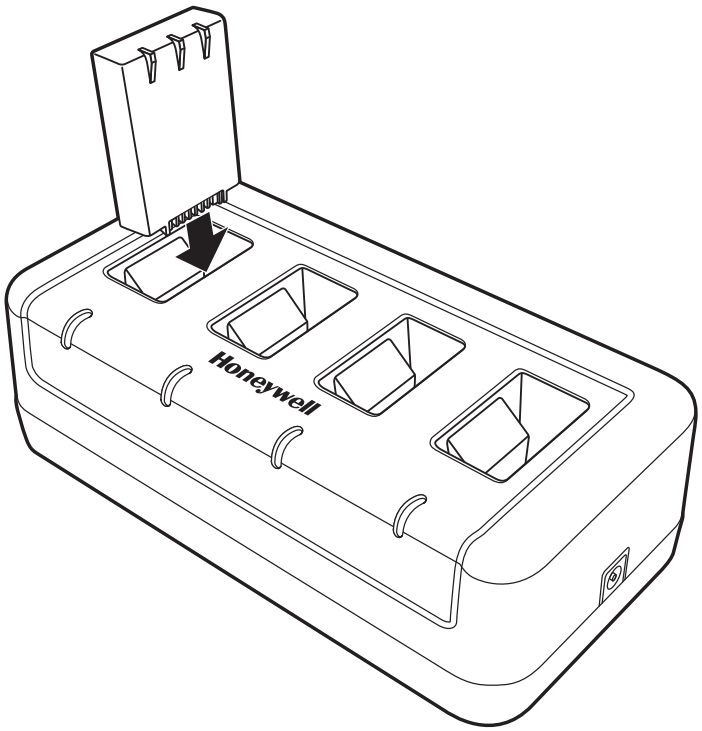
Temperature

The four and six-hour charge time applies when batteries are charged within the recommended temperature range of 50° to 95° F (10° to 35°C). Temperature has a significant effect on charging. For best results, battery packs should be at room temperature before inserting in the charger.

⚠ *When the battery temperature exceeds 40°C, the charger may exceed the stated four or six-hour charge time. The charger stops charging if the battery temperature is greater than 40°C, but will begin charging again when the battery temperature is less than 40°C.*

Charging Batteries

1. Supply the charger with power.
2. Insert batteries into the appropriate slots.
   The Status LED for each slot turns red to indicate that the battery is properly seated and has begun a charge cycle.



3. When the Status LED turns green, the battery in the slot has completed charging.

Recommendations for Storing Batteries

To maintain top performance from batteries, follow these storage guidelines:

- Avoid storing batteries outside of the specified temperature range of -4 to 122° F (-20 to 50°C) or in extremely high humidity.
- For prolonged storage, do not keep batteries stored in a charger that is connected to a power source.

Troubleshooting

If you encounter problems with the charger, refer to chart below for possible solutions. If problems persist, contact Technical Assistance (see page 11-2).

Problem	**Issue**
The Status LED does not come on when I insert a battery pack into a slot.	Check the power connections to the device; make sure the battery pack is properly seated.

Technical Specifications

Structural	
Dimensions	7.3 in. long X 3.7 in. wide X 2.4 in. high (18.5 cm. X 9.4 cm. X 6.1 cm.)
Weight	11.5 oz. (325g)
Material	Case: Polycarbonate Color: Black
Capacity	Supports up to four Li-ion battery packs
Environmental	
Operating Temperature	14° to 122°F (-10° to 50°C)
Storage Temperature	-4° to +158°F (-20° to +70°C)
Charging Temperature	32° to 104°F (0° to 40°C)
Electrical Static Discharge	**Air:** ± 15k Vdc **Direct:** ± 8k Vdc
Humidity	90% relative humidity (non-condensing)
Power Supply	
Input (Universal)	100V-240V, 1.2 A 50-60Hz Included
Output	5Volts DC, 4.0 A
Charging	
Standard Charge	Standard Capacity 2200mAh - four hours Extended Capacity 3300mAh - six hours
Status LEDs	**Green:** charged **Red:** charging
Agency Approvals	
Power Supply	UL listed TUV licensed Power Supply compliant to FCC part 15, Class B
Charging	CE Marking CISPR Pub 22
Fire Retardant	UL94 V-0

11 Customer Support

Product Service and Repair

Honeywell International Inc. provides service for all its products through service centers throughout the world. To obtain warranty or non-warranty service, contact the appropriate location below to obtain a Return Material Authorization number (RMA #) before returning the product.

North America

Telephone: (800) 782-4263
E-mail: hsmnaservice@honeywell.com

Latin America

Telephone: (803) 835-8000
Telephone: (800) 782-4263
Fax: (239) 263-9689
E-mail: laservice@honeywell.com

Brazil

Telephone: +55 (11) 5185-8222
Fax: +55 (11) 5185-8225
E-mail: brservice@honeywell.com

Mexico

Telephone: 01-800-HONEYWELL (01-800-466-3993)
Fax: +52 (55) 5531-3672
E-mail: mxservice@honeywell.com

Europe, Middle East, and Africa

Telephone: +31 (0) 40 2901 633
Fax: +31 (0) 40 2901 631
E-mail: euroservice@honeywell.com

Hong Kong

Telephone: +852-29536436
Fax: +852-2511-3557
E-mail: apservice@honeywell.com

Singapore

Telephone: +65-6842-7155
Fax: +65-6842-7166
E-mail: apservice@honeywell.com

China

Telephone: +86 800 828 2803
Fax: +86-512-6762-2560
E-mail: apservice@honeywell.com

Japan

Telephone: +81-3-6730-7344
Fax: +81-3-6730-7222
E-mail: apservice@honeywell.com

Online Product Service and Repair Assistance

You can also access product service and repair assistance online at www.honeywellaidc.com.

Technical Assistance

If you need assistance installing or troubleshooting your device, please call your distributor or the nearest technical support office:

North America/Canada

Telephone: (800) 782-4263
E-mail: hsmnasupport@honeywell.com

Latin America

Telephone: (803) 835-8000
Telephone: (800) 782-4263
E-mail: hsmlasupport@honeywell.com

Brazil

Telephone: +55 (11) 5185-8222
Fax: +55 (11) 5185-8225
E-mail: brsuporte@honeywell.com

Mexico

Telephone: 01-800-HONEYWELL (01-800-466-3993)
E-mail: soporte.hsm@honeywell.com

Europe, Middle East, and Africa

Telephone: +31 (0) 40 7999 393
Fax: +31 (0) 40 2425 672
E-mail: hsmeurosupport@honeywell.com

Hong Kong

Telephone: +852-29536436
Fax: +852-2511-3557
E-mail: aptechsupport@honeywell.com

Singapore

Telephone: +65-6842-7155
Fax: +65-6842-7166
E-mail: aptechsupport@honeywell.com

China

Telephone: +86 800 828 2803
Fax: +86-512-6762-2560
E-mail: aptechsupport@honeywell.com

Japan

Telephone: +81-3-6730-7344
Fax: +81-3-6730-7222
E-mail: aptechsupport@honeywell.com

Online Technical Assistance

You can also access technical assistance online at www.honeywellaidc.com.

Limited Warranty

Honeywell International Inc. ("HII") warrants its products and optional accessories to be free from defects in materials and workmanship and to conform to HII's published specifications applicable to the products purchased at the time of shipment. This warranty does not cover any HII product which is (i) improperly installed or used; (ii) damaged by accident or negligence, including failure to follow the proper maintenance, service, and cleaning schedule; or (iii) damaged as a result of (A) modification or alteration by the purchaser or other party, (B) excessive voltage or current supplied to or drawn from the interface connections, (C) static electricity or electro-static discharge, (D) operation under conditions beyond the specified operating parameters, or (E) repair or service of the product by anyone other than HII or its authorized representatives.

This warranty shall extend from the time of shipment for the duration published by HII for the product at the time of purchase ("Warranty Period"). Any defective product must be returned (at purchaser's expense) during the Warranty Period to HII factory or authorized service center for inspection. No product will be accepted by HII without a Return Materials Authorization, which may be obtained by contacting HII. In the event that the product is returned to HII or its authorized service center within the Warranty Period and HII determines to its satisfaction that the product is defective due to defects in materials or workmanship, HII, at its sole option, will either repair or replace the product without charge, except for return shipping to HII.

EXCEPT AS MAY BE OTHERWISE PROVIDED BY APPLICABLE LAW, THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER COVENANTS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, ORAL OR WRITTEN, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

HII'S RESPONSIBILITY AND PURCHASER'S EXCLUSIVE REMEDY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT WITH NEW OR REFURBISHED PARTS. IN NO EVENT SHALL HII BE LIABLE FOR INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, AND, IN NO EVENT, SHALL ANY LIABILITY OF HII ARISING IN CONNECTION WITH ANY PRODUCT SOLD HEREUNDER (WHETHER SUCH LIABILITY ARISES FROM A CLAIM BASED ON CONTRACT, WARRANTY, TORT, OR OTHERWISE) EXCEED THE ACTUAL AMOUNT PAID TO HII FOR THE PRODUCT. THESE LIMITATIONS ON LIABILITY SHALL REMAIN IN FULL FORCE AND EFFECT EVEN WHEN HII MAY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH INJURIES, LOSSES, OR DAMAGES. SOME STATES, PROVINCES, OR COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

All provisions of this Limited Warranty are separate and severable, which means that if any provision is held invalid and unenforceable, such determination shall not affect the validity of enforceability of the other provisions hereof. Use of any peripherals not provided by the manufacturer may result in damage not covered by this warranty. This includes but is not limited to: cables, power supplies, cradles, and docking stations. HII extends these warranties only to the first end-users of the products. These warranties are non-transferable.

Limited Warranty Duration

- The duration of the limited warranty for terminals with an integrated imager is one year.
- The duration of the limited warranty for touch screens is one year.
- The duration of the limited warranty for Optimus HomeBase and Optimus QuadCharger is one year.
- The duration of the limited warranty for batteries is one year.
  Use of any battery from a source other than Honeywell may result in damage not covered by the warranty. Batteries returned to Honeywell International Inc. in a reduced state may or may not be replaced under this warranty. Battery life will be greatly increased when following the battery instructions in this user's guide.

How to Extend Your Warranty

Honeywell International Inc. offers a variety of service plans on our hardware products. These agreements offer continued coverage for your equipment after the initial warranty expires. For more information, contact your Sales Representative, Customer Account Representative, or Product Service Marketing Manager from Honeywell International Inc., or your Authorized Reseller.

Honeywell Scanning & Mobility
9680 Old Bailes Road
Fort Mill, SC 29707

www.honeywellaidc.com

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